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PPP extensions for IP/PPP-HDLC over SONET-SDH/

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Abstract:

IP has emerged as the internetworking protocol of choice. IP is a best-effort protocol which provides no guarantee of delivery or ordering of packets at their destination. IP is designed to be transparent to the topology of the underlying transport network. This transparency is provided by a framing protocol operating over the data link layer. Due to the popularity of IP, attempts are underway to transport IP traffic over various networks such as ADSL, HFC, ATM, SONET/SDH, and WDM. This paper examines the dynamics of IP traffic over SONET/SDH using PPP in HDLC-like framing. Alternative ATM framing (IP/ATM/SONET) is also presented, the main focus of this paper is on IP/PPP/SONET and its extensions, such as PPP multilink, and PPP tunneling. A discussion on the applicability of these PPP extensions to wavelength division multiplexing (WDM) networks is also presented in the conclusion.

Index Terms:

SONET asynchronous transfer mode digital subscriber lines hybrid fibre coax networks internetworking synchronous digital hierarchy telecommunication traffic transport protocols wavelength division multiplexing ADSL ATM ATM framing HDLC-like framing HDLC traffic transport IP/ATM/SONET IP/PPP-HDLC IP/PPP/SONET MAC layer PPP PPP multilink PPP tunneling protocol SONET-SDH/WDM SONET/SDH WDM networks browsing best-effort protocol data link layer framing protocol internetworking protocols transport network wavelength division multiplexing networks

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